We claim:

1. A mixture comprising

(A) an isocyanurate and/or biuret of 1,6-diisocyanatohexane (HDI),

(B) an isocyanurate of 1-isocyanato-3,5,5-trimethyl-5-isocyanatomethylcyclohexane (IPDI),

(C) at least one emulsifier, obtainable by reacting at least one diisocyanate (C2) selected from tetramethylene diisocyanate, hexamethylene diisocyanate (HDI), dodecamethylene diisocyanate, 1,4-diisocyanatocyclohexane, 4,4'-di(isocyanatocyclohexyl)methane, trimethylhexane diisocyanate, tetramethylhexane diisocyanate, 1-isocyanato-3,3,5-trimethyl-5-(isocyanatomethyl)cyclohexane (IPDI), 2,4- or 2,6-tolylene diisocyanate and the isomer mixtures thereof, tetramethylxylylene diisocyanate, p-xylylene diisocyanate, 2,4'- or 4,4'-diisocyanatodiphenylmethane with at least one component (C1) containing at least one group which is reactive toward isocyanate groups and containing at least one hydrophilic group, and

(D) if desired, solvent.

2. A mixture as claimed in claim 1, comprising in solvent-free form

(A) 40 – 90% by weight,
(B) 5 – 60% by weight, and
(C) 5 – 40% by weight,

the sum of (A), (B), and (C) making 100% by weight.

3. A mixture as claimed in claim 1, wherein component (C1) contains exactly one isocyanate-reactive group and exactly one nonionic hydrophilic group.

4. A mixture as claimed in claim 3, wherein component (C1) is at least one polyalkylene oxide polyether alcohol obtainable by reacting at least one saturated aliphatic alcohol having 1 to 4 carbon atoms in the alkyl radical with ethylene oxide, propylene oxide or a mixture thereof.

5. A mixture as claimed in claim 4, wherein the polyalkylene oxide polyether alcohol contains on average from 5 to 35 ethylene oxide units per molecule.

6. A mixture as claimed in any of the preceding claims, wherein at least one of the components (A) and/or (B) has additionally been at least partly reacted with a component (C1).

7. A mixture as claimed in any of the preceding claims, wherein a carbonic ester or lactone is used as solvent (D).

8. A mixture as claimed in any of the preceding claims, wherein the solvent is present in amounts up to 60% by weight based on the total mixture.

9. A polymer dispersion comprising a mixture as claimed in any of the preceding claims.

10. A coating composition comprising a mixture as claimed in any of claims 1 to 8 or a polymer dispersion as claimed in claim 9.

11. A method of coating substrates which comprises using a mixture as claimed in any of claims 1 to 8 as coating material.

12. The use of a mixture as claimed in any of claims 1 to 6 as a coating material for wood, wood veneer, paper, paperboard, cardboard, textile, leather, nonwoven, plastics surfaces, glass, ceramic, mineral building materials or coated or uncoated metals, or as an adhesive.

13. A method of adhesively bonding substrates which comprises using a mixture as claimed in any of claims 1 to 8 or a polymer dispersion as claimed in claim 9.

Water-emulsifiable isocyanates with improved properties

Abstract

Mixtures comprising

(A) an isocyanurate and/or biuret of 1,6-diisocyanatohexane (HDI),

(B) an isocyanurate of 1-isocyanato-3,5,5-trimethyl-5-isocyanatomethylcyclohexane (IPDI),

(C) at least one emulsifier, obtainable by reacting at least one diisocyanate (C2) selected from tetramethylene diisocyanate, dodecamethylene diisocyanate, 1,4-diisocyanatocyclohexane, 4,4'-di(isocyanatocyclohexyl)-methane, trimethylhexane diisocyanate, tetramethylhexane diisocyanate, 2,4- or 2,6-tolylene diisocyanate and the isomer mixtures thereof, tetramethylxylylene diisocyanate, p-xylylene diisocyanate, 2,4'- or 4,4'-diisocyanatodiphenyl-methane and a mixture of at least two of these diisocyanates with at least one component (C1) containing at least one group which is reactive toward isocyanate groups and containing at least one hydrophilic group, and

(D) if desired, solvent.